



Center for
Clean Air Policy

U.S. State & European Union Climate Policies: Implications for California

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About the Center for Clean Air Policy

- **Non-profit environmental think-tank, founded by bipartisan governors in 1985, to work with governments to develop practical strategies to protect AQ and climate**
- **Designed emission trading and climate policy measures for the European Community and a range of developing and Eastern European countries**
- **Major issues currently include climate change, mercury emissions, transportation/smart growth**
- **Working with states since 1992 to build climate change leadership (including CA, CT, MA, MD, ME, NJ, NY, OR, WA, WI).**



Overview of Presentation

- Importance of state climate actions, recent policy outcomes, lessons learned
- European Union climate policy
- Implications/opportunities for California
- Plans for California analysis

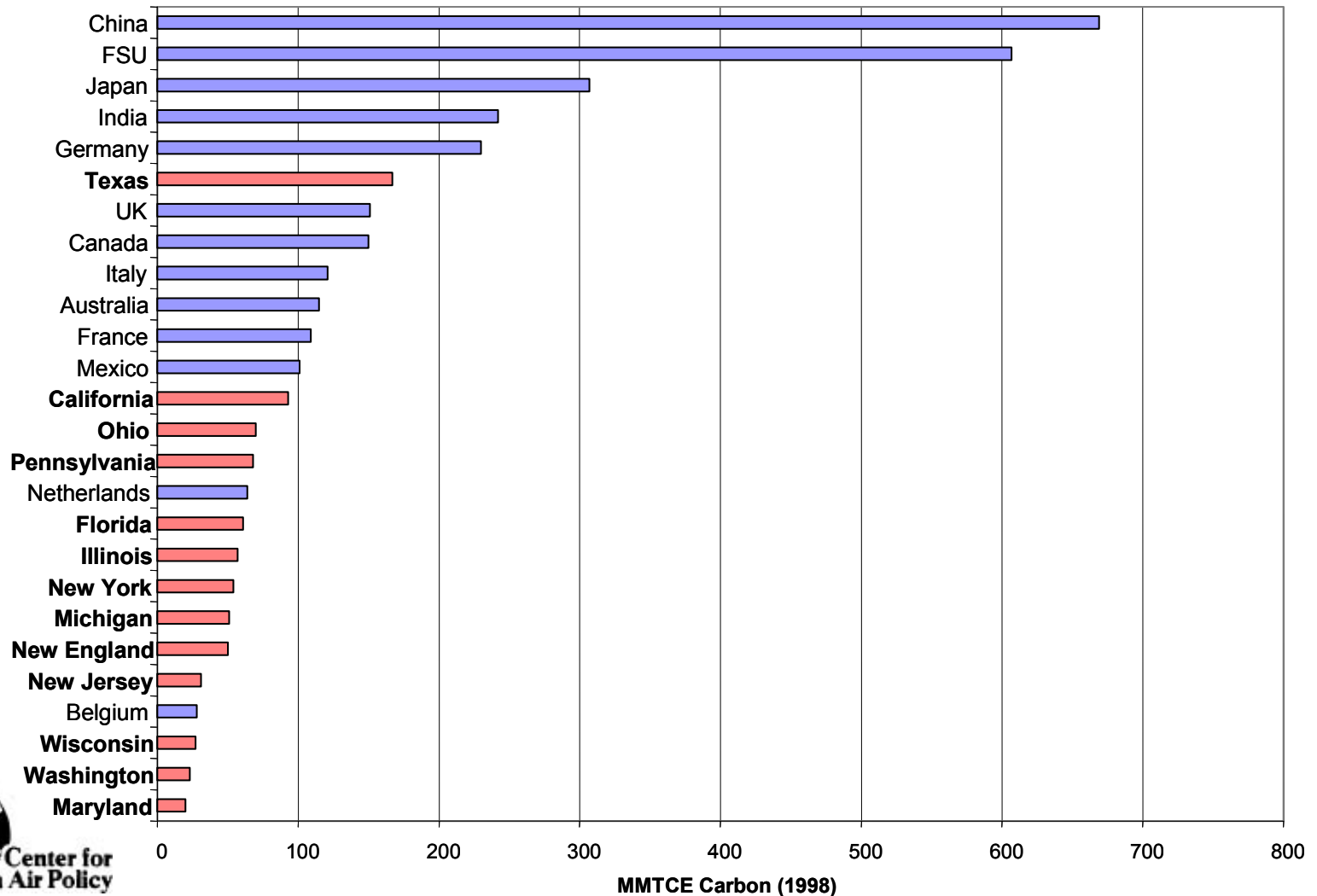
Current Events

- **Russia in process of ratifying Kyoto Protocol**
 - » **Creates price signal for technology development**
 - » **Canada's Kyoto experience may guide states**
 - » **EU & KP programs will increase pressure on US companies, increase shareholder efforts, Wall Street attention to risks**
 - » **Fewer opportunities for states to trade with Kyoto countries**
- **Regional Greenhouse Gas Initiative cap allocation decision due in December, final decision April 2005, state laws would follow to implement caps.**
- **Connecticut – Stakeholder process complete. Numerous measures adopted by legislature.**
- **Maine – Stakeholder process near completion**
- **Puget Sound – Stakeholder process near completion**
- **Brazil pressured carmakers to produce 100% flex-fuel vehicles.**

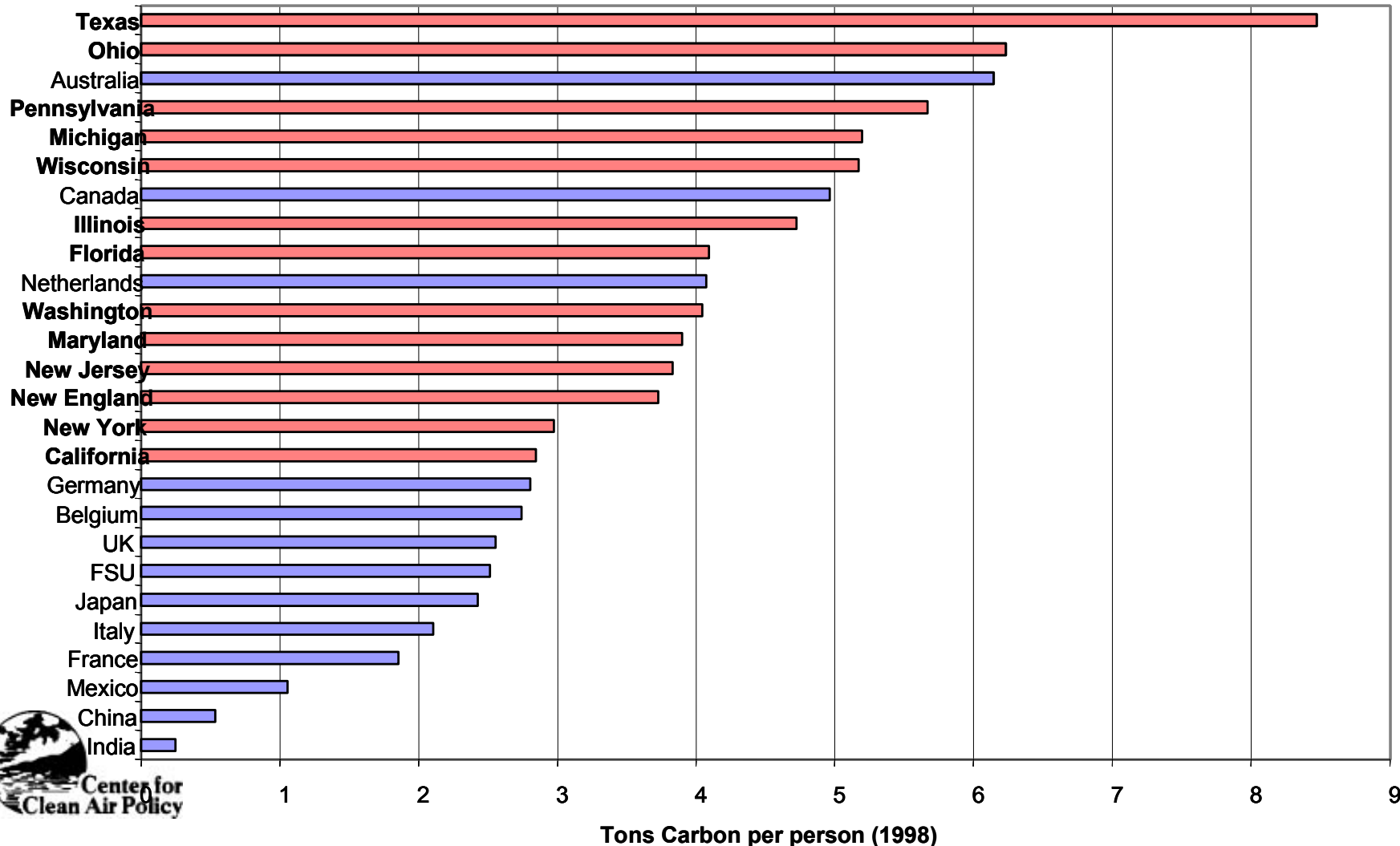
“Laboratories of Democracy”

- **Many environmental laws enacted by states have charted the way for later passage of major national legislation.**
- **State early action, in 1980's, to address acid rain had major impact on passage of 1990 national legislation.**
 - » **Acid rain laws were initially introduced in a number of states.**
- **California's air quality laws laid groundwork for national air quality laws in 1970, 1977, 1990.**

States are Internationally Significant GHG Emitters



Per Capita Carbon Emissions



State Actions – Big Picture

- **28 states gave statewide GHG action plans**
 - » Only a few are highly developed (NJ, NY, CT, RI, MA, New England)
 - » More are on the way (ME, Puget Sound, West Coast)
- **Many states with individual measures**
 - » Compendium includes over 100 types
 - » List is growing

Renewable Requirements and Public Goods Programs

- **11 states have renewable portfolio standards**
 - » CA requires 1% increase in renewable energy until a 20% renewable energy standard is achieved by 2017 (2010)
 - » Texas -- 2,000 MW of new RE by 2009
 - » NY -- RPS of 24% RE by 2013
- **14 states have public benefit charge (PBC) funds to pay for renewable energy & 16 have funds for EE**
 - » CA program spent \$542 million over 3-yr period; ~\$1.35 billion over next 10 yrs.
 - » NY \$142 million per yr. on EE from PBC
 - » NJ spends ~\$90 million per yr. on Energy Efficiency.

Electricity Initiatives

- **NH cap on CO₂ emissions from power plants at 1990 levels**
- **NJ agreement w/ power company to lower GHG emissions rate by 15%**
- **MA cap on 6 oldest coal plants of 10% below 1997-1999 levels by 2008**
- **OR, WA New source offset requirement, standard for CO₂ from power plants**
- **PA Universities commitment to purchase 5% of electricity needs from wind**
- **Tax incentives for EE and RE equipment in over half of US states**
- **Appliance standards for equipment not covered by federal standards introduced in CA, MA, MN, NY, and WI**
- **Regional cap-and-trade program (RGGI) expected by 4/05 in Northeast**



Transportation Initiatives

Measures to “Move the Money”:

- Maryland: **Priority Funding Areas** –limits infrastructure spending to “Priority Funding Areas”
- New York: **State Energy Plan** - redirects State funding toward energy-efficient transportation alternatives
- New Jersey: **Executive Order 4** - requires that state funding be consistent with smart growth principles

Technology/Greenhouse Gas Emission Standards:

- If States that have CA standards for Low Emission Vehicles (CT, MA, NY, NJ, VT, and ME) and Canada follow this std., 29% of N. Amer. auto market would be included

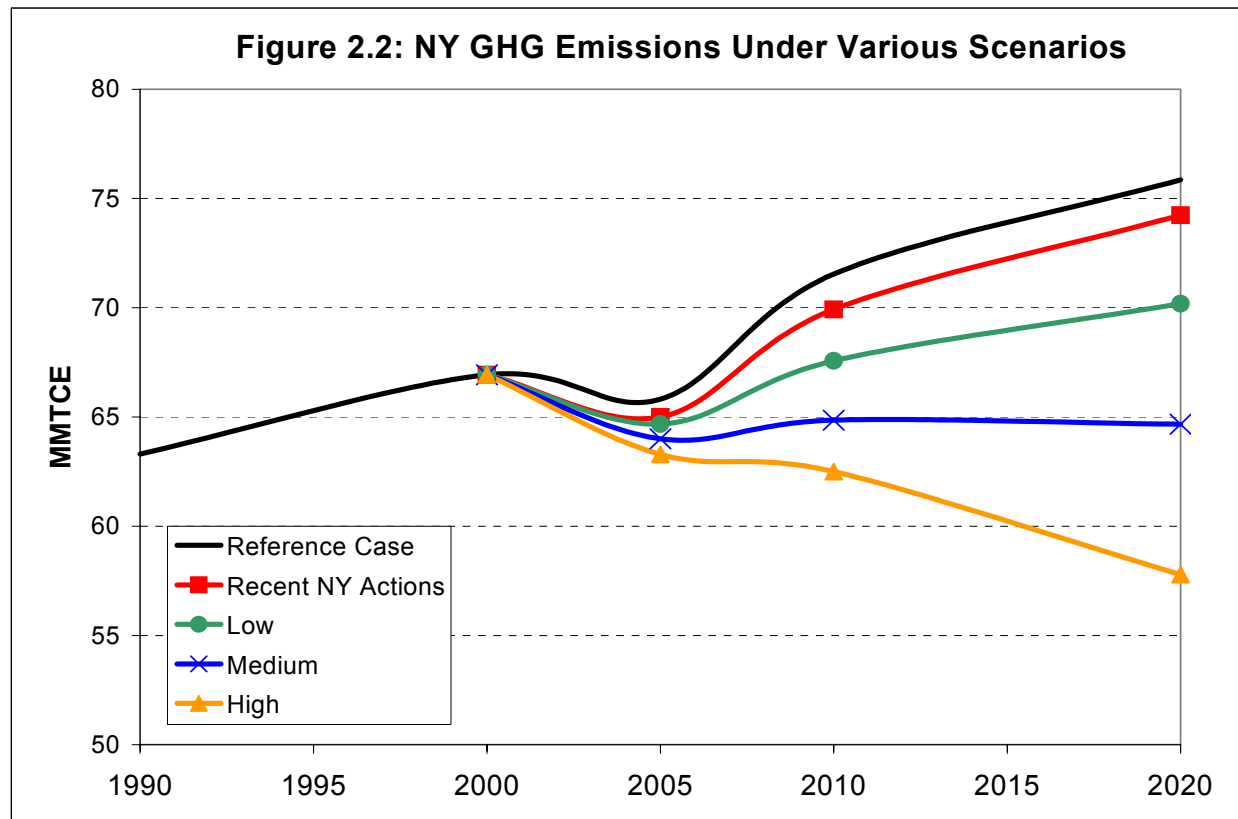
Developing a Results-Oriented Stakeholder Process

- **Political leadership is essential to achieving results**
- **Advisory group and public participation can help identify and analyze measures and build broad support for recommended policies**
- **Connecticut = model process – stakeholder process w/ PP produced consensus report to Cabinet Committee – Governor and Legislature put key measures on a “fast track” – recognized near-term and longer-term opportunities**

Example: New York's Analytical Approach

- Developed a Business as Usual emission baseline
- Adopted a statewide target based on bottom-up & top-down
- Identified & analyzed bottom-up mitigation measures under low, medium and high reduction scenarios
- Baselines and measures analyzed in five working groups:
 - » Transportation
 - » Electricity
 - » Buildings
 - » Industry
 - » Agriculture and Forestry
- Electricity Sector utilized ICF's IPM electricity dispatch model for integrated assessment of options built from bottom-up – stakeholder agreement on all model assumptions & options

New York: Policy Scenarios



Note: See handout for complete list of recommended actions.

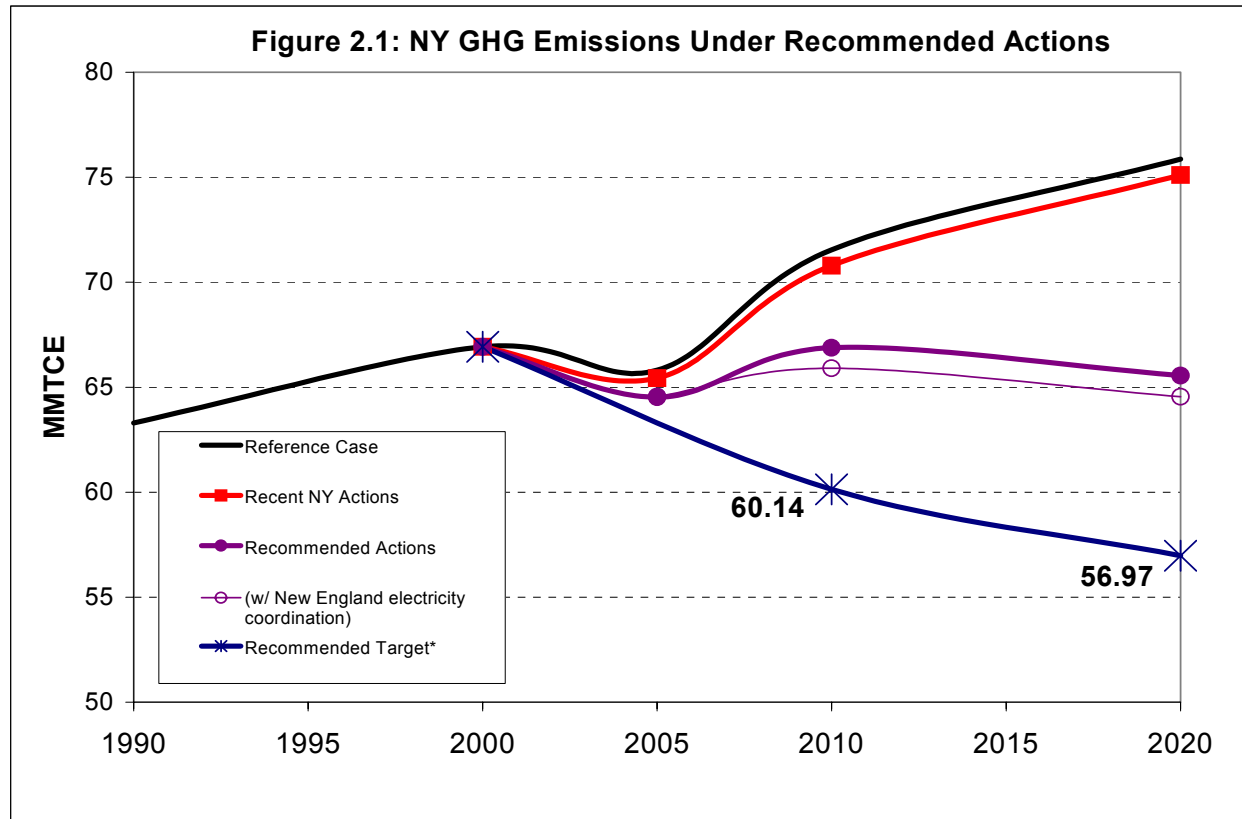
New York: Policy Outcomes

- **Adopted NY State Energy Plan Goal to reduce greenhouse gases to 5% below 1990 by 2010 and 10% below by 2020**
- **Renewable Portfolio Standard of 24% by 2013, with an additional 1% of renewable energy to come from voluntary 'green energy' purchases in retail market**
- **Adoption of the CA greenhouse gas tailpipe standards**
- **Establishment of a tax credit for alternatively-fueled vehicles and hybrids – \$2000, plus no incremental sales tax on price difference**
- **Governor Pataki convened the regional greenhouse gas initiative (RGGI) to develop a regional strategy for controlling emissions and explore possibility of implementing a regional GHG trading program.**

New York: Policy Outcomes II

- Decision to shift transport \$ to climate-friendly options, require GHG assessment of all infrastructure investments, expanded smart growth
- Incentives for creation of domestic bio-fuels industry
- Mandatory GHG emissions reporting

New York: Base Case and Recommendations



Key Policy Lessons from State Actions

- **Regional cooperation is good, but ultimately, action must occur at individual state level.**
- **Mandatory reporting, tracking and implementation mechanisms are essential for success, esp. in non-electric sectors.**
- **Cap & trade is much more effective than new source offsets (Oregon, Washington).**
- **Caps work well with RPS & public benefit programs.**
- **A set of complementary policies on fuels, technology & smart growth is necessary to slow VMT growth and reduce transport GHG emissions.**
- **Industry & freight options deserve attention.**

European Climate Program

- **Combines Cap & Trade for electricity & 6 industry sectors w/ Policies and Measures for other sectors**
- **CO2 trading in member states begins next January**
 - » **National reduction targets based on Kyoto burden sharing agreement – collectively 8% below 1990 by 2012**
 - » **Covers more than 10,000 installations in power generation, oil refining, steel, cement, lime, pulp & paper sectors, aluminum**
 - » **Covers facilities in 25 countries**
- **Three-year mandatory “warm-up” phase from 2005 to 2007**
- **Five-year mandatory Kyoto phase from 2008 to 2012**

**Member State's Burden
Sharing Allocation
= Number of tonnes CO₂ eq**

Transport

Households

**Non-trading
businesses
Non-trading
gases**

Trading sectors
*Reserve for
new entrants ?*

**Installations
within
Energy activities**

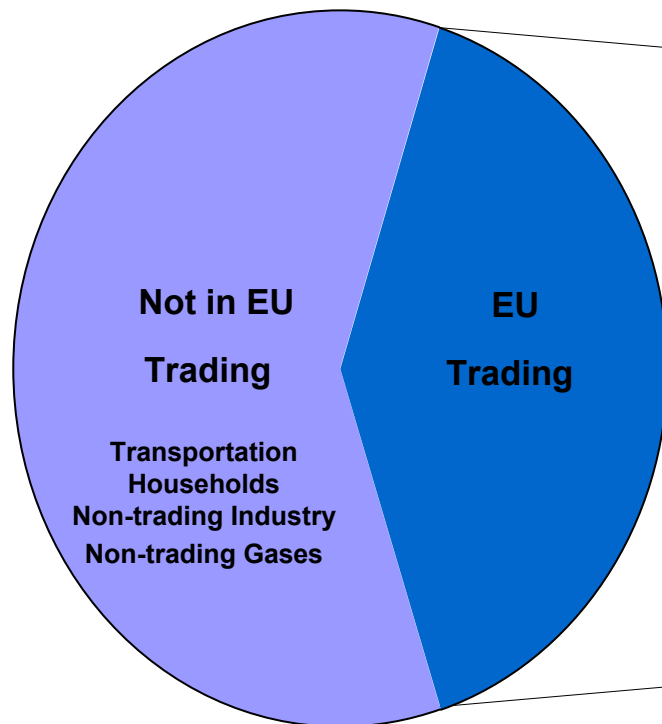
**Installations within
pulp & paper**

**Installations
within
ferrous metals**

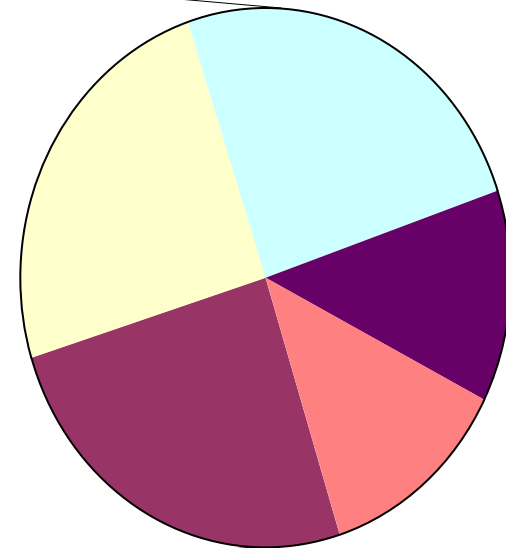
**Installations within mineral
industry (incl. cement,
lime, glass, ceramic products)**

European Union: GHG Emissions Profile

**Kyoto Allowable Emissions
92% of 1990 Emissions**



**Sectors in EU
Trading Scheme**



**Energy Activities Ferrous
Metals Mineral Industry
Pulp & Paper**

European Union Trading Program Allocation Method and Penalties

- **Each country decides on aggregate cap for each sector and allocates to companies.**
 - » Most countries have over-allocated to sectors
- **Method for 2008 to 2012 :**
 - » Free of charge allocation of at least 90%, member states may auction up to 10%
- **EC review in mid-2006 to look at further harmonisation**
- **Penalties – Future offset plus €40 / tonne in the first period and €100 / tonne thereafter**
 - » Violator's names will be published

Other European Approaches: Benchmarking and Pricing Programs

- **Netherlands Covenant Benchmarking program**
 - » achieves “best in the world” efficiency improvements, effectively reducing GHG emissions per unit output, while boosting competitiveness of energy intensive export industries
 - » sensitive to international competition and higher energy prices and more severe on the remaining industrial, commercial, residential and household sectors
- **Benchmarking provides foundation for cap and trade program**
- **Numerous carbon taxes/ gasoline taxes/ RE incentives**
- **London Road Pricing**
 - » \$8 per day charge to drive in central city
 - » Congestion dramatically reduced
 - » Estimated 50% improvement in avg. speed
 - » Dramatic increase in mass transit usage



European Union: Current State of Play

- **Level of carbon market liquidity uncertain –most approved NAPs are close to BAU levels**
- **Industry concerns about cost of compliance**
- **Linking directive allows companies to purchase reductions through CDM & JI**
- **Strong interest in linking to other trading systems (e.g., North America, Asia-Pacific) – fewer restrictions than Kyoto regime**
 - **Current system allows credits from KP countries**
 - **Modification requires agreement by Council**
 - **Parliamentary debate to allow linking regional programs (e.g., Canada, US state/regional, Australian provinces)**

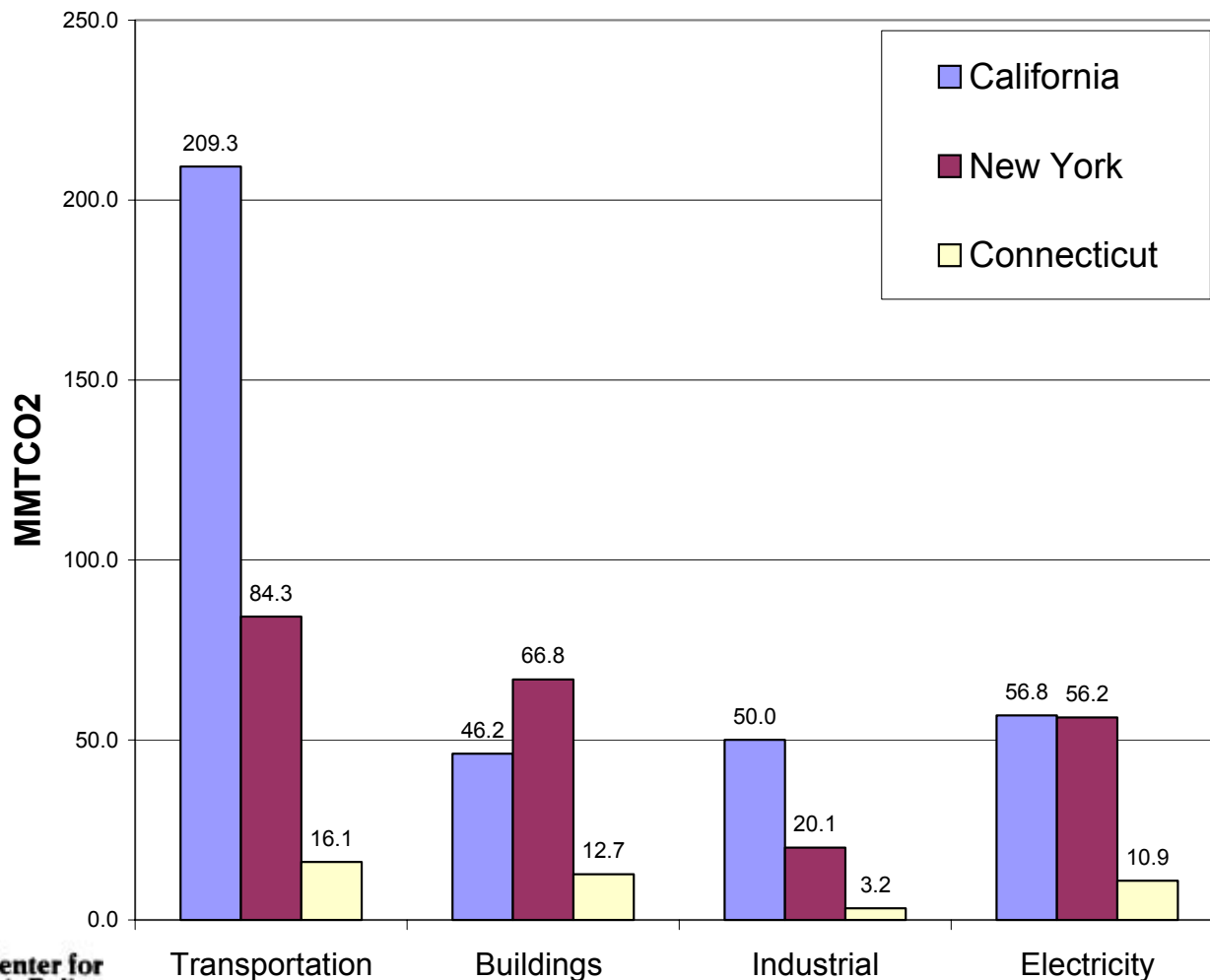
Key Differences Between Kyoto (EU) and State Programs

- **EU/Canada must meet overall cap**
 - » Key sectors included in cap, other sectors have policy measures
 - » Game is zero sum – if don't get reductions from capped sectors, need to get them from uncapped sectors, or by buying allowances internationally.
- **NY, New England established targets, but they are not mandatory**
 - » In NY, recommended measures go about half way to meeting cap.
 - » In CT, measures get to about 70% of the target, and they explicitly state that additional actions are needed.

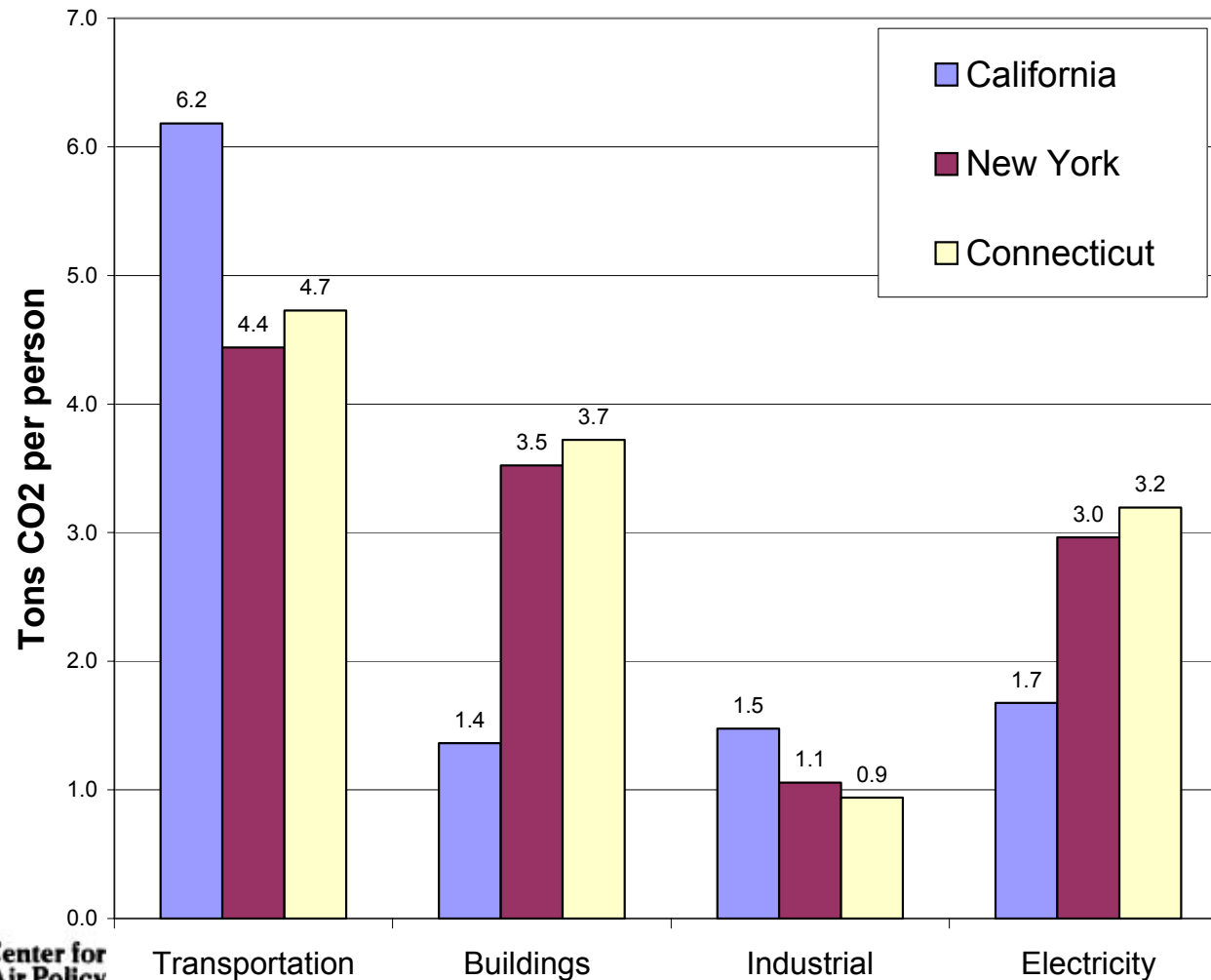
Potential Areas for California Leadership

- **Multi-sector cap-and-trade targeting both industry and power**
 - » Consider an upstream cap as well as downstream
 - » Consider alternative allocation mechanisms, including an auction
- **Transportation measures**
 - » Provide state support for regional smart growth scenarios (SCAG growth vision, SACOG Blueprint, SANDAG plan etc.)
 - » Target transportation, infrastructure funding and incentives to “efficient locations” e.g., in central areas, near transit, areas with existing infrastructure, etc.
 - » Pursue port and freight initiatives
- **Measures to address HFC’s and other high-GWP gases**
- **Mandatory GHG reporting**
- **Statewide sinks policies**

California Challenge Relative to Other States (total emissions)



California Challenge Relative to Other States (per capita)



Transportation Sector – Proposed Analytical Approach

- **Begin with CA's emission baseline**
 - » **Modify baseline as needed**
- **Translate VMT savings estimated by metropolitan and regional planning organizations into GHG reductions**
- **Evaluate reductions in jet fuel consumption and expansion of high speed rail**
- **Evaluate freight sector GHG reduction strategies**
- **Evaluate expanding use of alternative fuels, including**
 - » **Various bio-fuels;**
 - » **Liquefied natural gas;**
 - » **Compressed natural gas;**
 - » **Propane;**
 - » **Fisher-Tropsch (synthetic) diesel; and**
 - » **Hydrogen.**



Power & Inter-sector Trading – Proposed Analytical Approach

- Propose to use the National Energy Modeling System electricity market and industrial modules
- Propose to undertake a series of runs each building upon the previous run
 - » **state and regional baselines**
 - » **near-term measures (recently proposed more aggressive RPS, additional energy efficiency)**
 - » **state and regional power sector caps**
 - » **caps on power and industry, including industrial boilers and potentially other industrial sources**

Additional Measures

- Off-line analyses of various industrial, power and agricultural measures, including:
 - » Opportunities in the cement industry
 - » Opportunities in the oil refining industry
 - » Penetration of bio-digesters
 - » Offset programs for new and existing power sources

Contact Information

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Link to CCAP reports on State climate actions:

http://www.ccap.org/pdf/State_Actions.pdf

http://www.ccap.org/pdf/statetransport_climat.pdf

